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WHAT IS CLAIMED IS:

1. A method for selectively stimulating proliferation and differentiation of T lymphoid cells to generate a high density of clinically relevant numbers of T lymphoid cells, comprising:

collecting material comprising body fluid or tissue containing mononuclear cells from a mammal;

treating the cells are under conditions whereby ex vivo differentiation of the cells into // h2-like or Th2 cells is induced; and

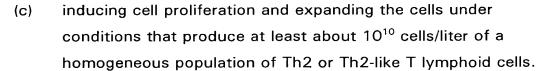
contacting, in the absence of exogenous interleukin-2, the material with two or more activating proteins specific for cell surface proteins present on cells in the material and in an amount sufficient to induce *ex vivo* cell expansion, whereby the cells expand to at least about 10¹⁰ cells comprising predominantly Th2 or Th2-like cells.

- 2. The method of claim 1, further comprising purification of the expanded cells.
- 3. The method of claim 1, wherein the expanded cells are specific for a defined antigen.
- 4. The method of claim 1, wherein the expanded cells are predominantly Th2 cells.
- 5. The method of claim 1, wherein the cells are activated ex vivo in the presence of IL-4 with or without the presence of antigamma interferon and anti-IL-12 monoclonal antibodies to cause differentiation into Th2 cells.
- 6. The method of claim 1, wherein the immune cells are activated ex vivo in the presence of interferon-y, whereby differentiation of Th2 cells are effected.
- 7. The method of claim 1, wherein the proteins specific for cell surface proteins are one or more monoclonal antibodies specific for immune cell surface proteins.

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- 8. The method of claim 7, wherein the monoclonal antibodies are specific for CD3 or CD2, combined with any combination of monoclonal antibodies specific for one or more of the following: CD4, CD8, CD11a, CD27, CD28, CD44 and CD45RO.
- 5 9. The method of claim 1, wherein cell expansion is effected in a hollow fiber bioreactor.
 - 10. The method of claim 1, wherein the cells are expanded to an excess of 10^{10} cells.
- 11. The method of claim 4, wherein the expanded cells are10 purified.
 - 12. The method of claim 1, wherein the mammal is a human.
 - 13. The method of claim 2, wherein the mammal is a human.
 - 14. The method of claim 7, wherein the mammal is a human.
- 15. The method of claim 1, wherein the expanded cells are15 predominantly Th2 cells, whereby the resulting population has a Th2 or Th2-like cytokine profile.
 - 16. The method of claim 2, wherein the expanded cells are predominantly Th2 cells, whereby the resulting population has a Th2 or Th2-like cytokine profile.
- 20 17. The method of claim 7, wherein the expanded cells are predominantly Th2 cells, whereby the resulting population has a Th2 or Th2-like cytokine profile.
 - 18. A method for generating clinically relevant cell numbers of Th2 or Th2-like T lymphoid cells, comprising:
- 25 (a) collecting material containing mononuclear T lymphoid cells from a mammal;
 - (b) activating the T lymphoid cells to alter their cytokine production profile by causing differentiation of the cells into Th2 or Th2-like cells; and

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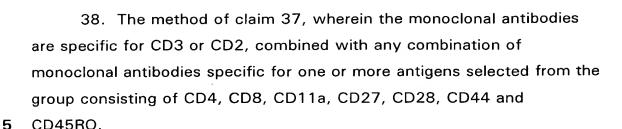
- 19. The method of claim 18, wherein the T lymphoid cells with altered cytokine profile are purified.
 - 20. The method of claim 18, wherein the T lymphoid cells with altered cytokine profile are specific for a defined antigen.
 - 21. The method of claim 18, wherein the T lymphoid cells are activated to differentiate into Th2 cells.
- 10 22. The method of claim 18, wherein the resulting population of expanded cells includes Th2-like cells.
 - 23. The method of claim 22, wherein the cells are activated in the presence of IL-4 anti-gamma interferon antibodies and/or anti-IL-12 antibodies, whereby cells differentiate into Th2 cells
- 15 24. The method of claim 18, wherein the cells are expanded in the presence of two or more monoclonal antibodies.
 - 25. The method of claim 24, wherein the monoclonal antibodies are specific for CD3 or CD2, combined with any combination of monoclonal antibodies specific for one or more of the following: CD4, CD8, CD11a, CD27, CD28, CD44 and CD45RO.
 - 26. The method of claim 18, wherein the cells are expanded in a hollow fiber bioreactor.
 - 27. The method of claim 18, wherein the cells are expanded to an excess of 10⁹ cells.
- 25 28. The method of claim 18, wherein the cells are expanded to an excess of 10¹⁰ cells.
 - 29. A method for generating clinically relevant numbers of regulatory T lymphoid cells for autologous cell therapy, comprising:
 - (a) collecting material comprising body fluid or tissue containing mononuclear cells from a mammal;



- (b) treating the cells to induce differentiation of mononuclear cells into Th2 or Th2-like cells; and
- (c) contacting the resulting differentiated cells with two or more activating proteins specific for cell surface proteins present on the cells in an amount sufficient to induce *ex vivo* cell expansion, whereby clinically relevant numbers of regulatory cells for autologous cell therapy are generated.
- 30. The method of claim 29, wherein cells are purified from the material.
- 31. The method of claim 29, wherein the treating and contacting steps occur in the absence of exogenous cytokines or the contacting step occurs in the absence of exogenous cytokines.
 - 32. The method of claim 29, wherein the cells are specific for a selected antigen.
- 33. The method of claim 29, wherein the resulting cells comprise CD4 + T-cells.
 - 34. The method of claim 29, wherein the resulting cells are predominantly Th2 cells.
- 35. The method of claim 29, wherein the resulting cells comprise 20 CD8 + T-cells.
 - 36. The method of claim 29, wherein at step (b) the cells are treated with IL-4 with or without anti-gamma interferon antibodies and/or anti-IL-12 antibodies to cause differentiation into Th2 cells.
- 37. The method of claim 29, wherein the proteins specific for cell25 surface proteins are one or more monoclonal antibodies specific for immune cell surface proteins.

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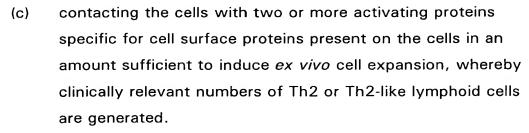


- 39. The method of claim 29, wherein cell expansion is effected in a hollow fiber bioreactor.
- 40. The method of claim 29, wherein the cells are expanded to about 10⁹ cells or greater.
- 10 41. The method of claim 29, wherein the cells are expanded to about 10¹⁰ cells or greater.
 - 42. The method of claim 29, wherein the expanded cells are predominantly Th2 cells.
 - 43. The method of claims 29, wherein the expanded cells are contained in a volume of one liter or less.
 - 44. The method of claim 29, wherein the expanded cells are contained in a volume of about 500 mls or less.
 - 45. The method of claim 29, wherein the expanded cells are contained in a volume of about 250 mls or less.
- 20 46. The method of claim 29, wherein the expanded cells are predominantly Th2-like cell, wherein:

Th2-like cells are cells that produce a majority of Th2 cytokines.

- 47. A method for generating clinically relevant numbers of regulatory Th2, or Th2-like lymphoid cells for autologous cell therapy, comprising:
 - (a) collecting material comprising body fluid or tissue containingT lymphoid cells from a mammal;
 - (b) treating the cells to induce differentiation of some of the mononuclear cells into Th2 or Th2-like cells, wherein Th2-like cells are cells that produce a majority of Th2 cytokines; and

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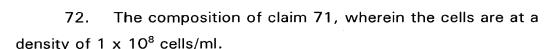
- 48. The method of claim 47, wherein cells are either purified or purged from the material.
- 49. The method of claim 47, wherein the treating or contacting steps occur in the absence of exogenous cytokines.
- 50. The method of claim 47, wherein the regulatory cells are specific for a defined antigen.
 - 51. The method of claim 47, wherein the regulatory cells are CD4 + T-cells.
- 52. The method of claim 47, wherein the regulatory cells are 15 CD8 + T-cells.
 - 53. The method of claim 47, wherein the cells are treated with IL-4 with or without the presence of anti-gamma interferon monoclonal antibodies and/or anti-IL-12 monoclonal antibodies to cause the differentiation into Th2 cells.
- 54. The method of claim 47, wherein the proteins specific for cell surface proteins are one or more monoclonal antibodies specific for immune cell surface proteins.
 - 55. The method of claim 54, wherein the monoclonal antibodies are specific for CD3 or CD2, combined with any combination of monoclonal antibodies specific for one or more of the following: CD4, CD8, CD11a, CD27, CD28, CD44 and CD45RO.
 - 56. The method of claim 47, wherein cell expansion is effected in a hollow fiber bioreactor.

- 57. The method of claim 47, wherein the cells are expanded to an excess of 109 cells.
- 58. The method of claim 47, wherein the cells are expanded to an excess of 10^{10} cells.
- 5 59. The method of claim 47, wherein the expanded cells are administered to a patient.
 - 60. The method of claims 47, wherein the expanded cells are contained in a volume of about one liter or less.
- 61. The method of claim 47, wherein the expanded cells are contained in a volume of about 500 mls or less.
 - 62. The method of claim 47, wherein the expanded cells are contained in a volume about 250 mls or less.
 - 63. The method of claim 47, wherein the expanded cells are predominantly Th2 cells.
- 15 64. The method of claim 47, wherein the expanded cells are predominantly Th2-like cells.
 - 65. The method of claim 47, wherein the expanded cells are predominantly Th2 cells.
- 66. The method of claim 1, wherein the 10¹⁰ cells that are predominantly Th2 cells are produced.
 - 67. The method of claim 66, wherein the expanded cells are administered to a patient.
 - 68. The method of claim 1, wherein the cells are at a density of 1×10^8 cells/ml.
- 25 69. The method of claim 1, wherein density of the cells is at least 10⁹ cells/liter.
 - 70. The method of claim 1, wherein density of the cells is at least 10^{10} cells/liter.
- 71. A composition, comprising predominantly Th2 or Th2-like 30 cells produced by the method of claim 1.

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- 73. A method of treatment of diseases in which a Th1 cytokine profile predominates, comprising administering the composition of claim 71, thereby altering the ratio of Th1/Th2 cell.
- 74. The method of claim 72, wherein the disease is a chronic inflammatory disease, chronic infectious diseases or an autoimmune disease.
- 75. The method of claim 74, wherein the disease is selected from the group consisting of multiple sclerosis, rheumatoid arthritis, Crohn's Disease, autoimmune thyroid disease and inflammatory bowel disease
 - 76. The method of claim 74, wherein the disease is selected from the group consisting of infections with human immunodeficiency virus, herpes simplex virus, cytomegalovirus or hepatovirus.
 - 77. A composition produced by the method of claim 20.
 - 78. A method of specific immunosuppression in organ and tissue transplant procedures or to provide immunoprotection in vaccination, comprising administering the composition of claim 20.
 - 79. The method of claim 74, wherein the disease is rheumatoid arthritis, wherein the composition is produced by a method comprising: collecting mononuclear cells from a rheumatoid arthritis patient; expanding the cells under conditions whereby a composition containing an amount of Th2 cells sufficient to suppress or reduce the chronic inflammatory lesions of the arthritis; and

infusing the resulting composition of cells into the patient.

- 80. The method of claim 79, wherein the number Th2 cells is at least 109.
- 81. The method of claim 79, wherein the cells are contained in a volume of 1 liter or less.

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82. The method of claim 74, wherein the disease is multiple sclerosis, and the composition is produced by a method, comprising: collecting mononuclear cells from a multiple sclerosis patient; expanding the cells under conditions whereby a composition containing an amount of Th2 cells sufficient to ameliorate the symptoms or retard or stop the progression of multiple sclerosis; and

infusing the resulting composition of cells into the patient.

- 83. The method of claim 82, wherein the number of cells is at least 10° cells.
- 10 84. The method of claim 82, wherein the cells are contained in a volume of 1 liter or less.
 - 85. The method of claim 82, wherein the cells have a memory phenotype.
 - 86. The method of claim 82, wherein the cells are specific for myelin or encephalitogenic epitopes of myelin antigens.
 - 87. The method of claim 74, wherein the disease inflammatory bowel disease (IBD), and the composition is produced by a method, comprising:

collecting mononuclear cells from an IBD patient;

expanding the cells under conditions whereby a composition containing an amount of Th2 cells sufficient to ameliorate the symptoms or retard or stop the progression of the IBD; and

infusing the resulting composition of cells into the patient.

- 88. The method of claim 87, wherein the number of cells is at 25 least 109 cells.
 - 89. The method of claim 87, wherein the cells are contained in a volume of 1 liter or less.
 - 90. The method of claim 87, wherein the disease is Crohn's disease (CD) or ulcerative colitis (UC).



- 91. The method of claim 87, wherein the Th2 cells are express integrin, $\alpha 4$, $\beta 7$.
- 92. A method for suppression transplant rejection, comprising: collecting mononuclear cells from a patient prior to undergoing organ or tissue transplantation;

expanding the cells under conditions whereby a composition containing an amount of Th2 cells sufficient to prevent rejection of the transplanted organ or tissue; and

infusing the resulting composition of cells into the patient.

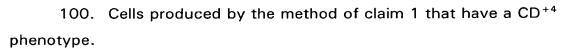
- 10 93. The method of claim 92, wherein the number of cells is at least 10⁹ cells.
 - 94. The method of claim 92, wherein the cells are contained in a volume of 1 liter or less.
- 95. The method of claim 92, wherein the transplanted tissue are transplanted islets of Langerhans.
 - 96. The method of claim 92, wherein the cells are specific for the alloantigens or for an antigen unique to the transplanted tissue or organ.
- 97. A method for treating insulin-dependent diabetes mellitus 20 (IDDM), comprising:

collecting mononuclear cells from a patient diagnosed with IDDM or at high risk for developing IDDM;

expanding the cells under conditions whereby a composition containing an amount of Th2 cells sufficient to prevent or retard islet destruction; and

infusing the resulting composition of cells into the patient.

- 98. The method of claim 97, wherein the number of cells is at least 10⁹ cells.
- 99. The method of claim 97, wherein the cells are contained in a volume of 1 liter or less.



101. Cells produced by the method of claim 1 that have a CD⁺⁸ phenotype